Module 7   Ratio, Proportion, and Percent
Lesson 1   Square Roots

1. Model the square number 36.
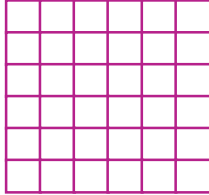
Evaluate.

2. $\sqrt{64}$

8

3. $3+\sqrt{9}$

6

4. $6^2+\sqrt{100}$

46

5. $\sqrt{225}$

15

6. $\sqrt{169}-13$

0

7. $\sqrt{36}+\sqrt{49}+\sqrt{81}$

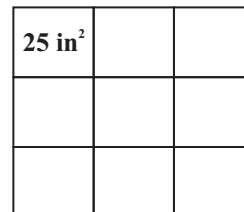**22**

8. $3^2+\sqrt{144}+2^2$

25

9. $\sqrt{1}+\sqrt{4}$

3

10. $\sqrt{1600}-4^2$

24

11. A small square window has an area of 25 square inches. Nine of these small windows are arranged to form one larger window as shown. What is the perimeter of the large window?

25 in²		

The perimeter of the window is 60 inches.

12. Ms. Castillo's square yard has a perimeter of 160 feet. One bag of fertilizer covers 200 square feet. How many bags of fertilizer does Ms. Castillo need to fertilize her yard?

Ms. Castillo will need eight bags of fertilizer.

Journal

1. Explain why seven is not a square number but nine is a square number.

2. Explain and correct the error shown below.

$$4^2 + \sqrt{100}$$
$$16 + 50$$
$$66$$

3. Does zero have a square root? Explain. Does –4 have a square root? Explain.

Cumulative Review

Evaluate.

1. $\left|-6\right| + 7$

   13

2. $-15 - 20$

   –35

3. $-100 + 400$

   300

Write the prime factorization of each number.

4. 150

   $2 \times 3 \times 5^2$

5. 84

   $2^2 \times 3 \times 7$

Write each number in scientific notation.

6. 740,000,000,000

   7.4×10^{11}

7. 0.000000002

   2×10^{-9}

Independent Practice

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Write each number in standard form.

8.   0.00008005

8.005 × 10^{-5}

9. 5.6×10^7

56,000,000

Divide.

10. $42 \div 0.008$

5,250

11. $6\dfrac{1}{4} \div 5$

$1\dfrac{1}{4}$

Possible Journal Answers

1. **Seven is not a square number because seven cannot be modeled as a square with the same number of rows and columns. Nine can be modeled as a square with three rows and three columns, so nine is a square number.**

2. **The error is that $\sqrt{100}$ was divided in half to get 50. To find a square root, think what integer times itself equals that number. Since 10 times 10 equals 100, the square root of 100 is 10. The correct solution is 16 + 10 = 26.**

3. **The number zero has a square root. It is 0 because 0 × 0 = 0. The number –4 does not have a square root because there is no integer, that when multiplied by itself, equals –4 because 2 × 2 = 4 and –2 × – 2 = 4.**